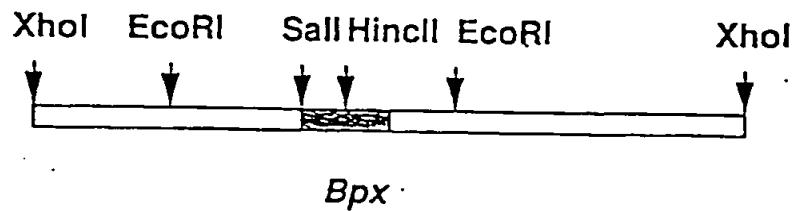


09847665 050301

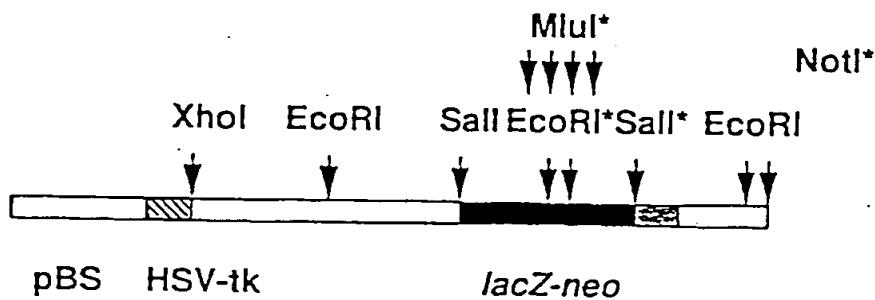
FIGURE 1

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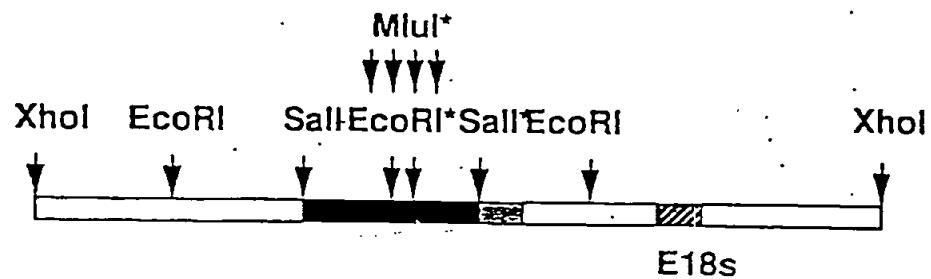
*a*



*b*



*c*



\* introduced sites

FIGURE 2

09042600 050301

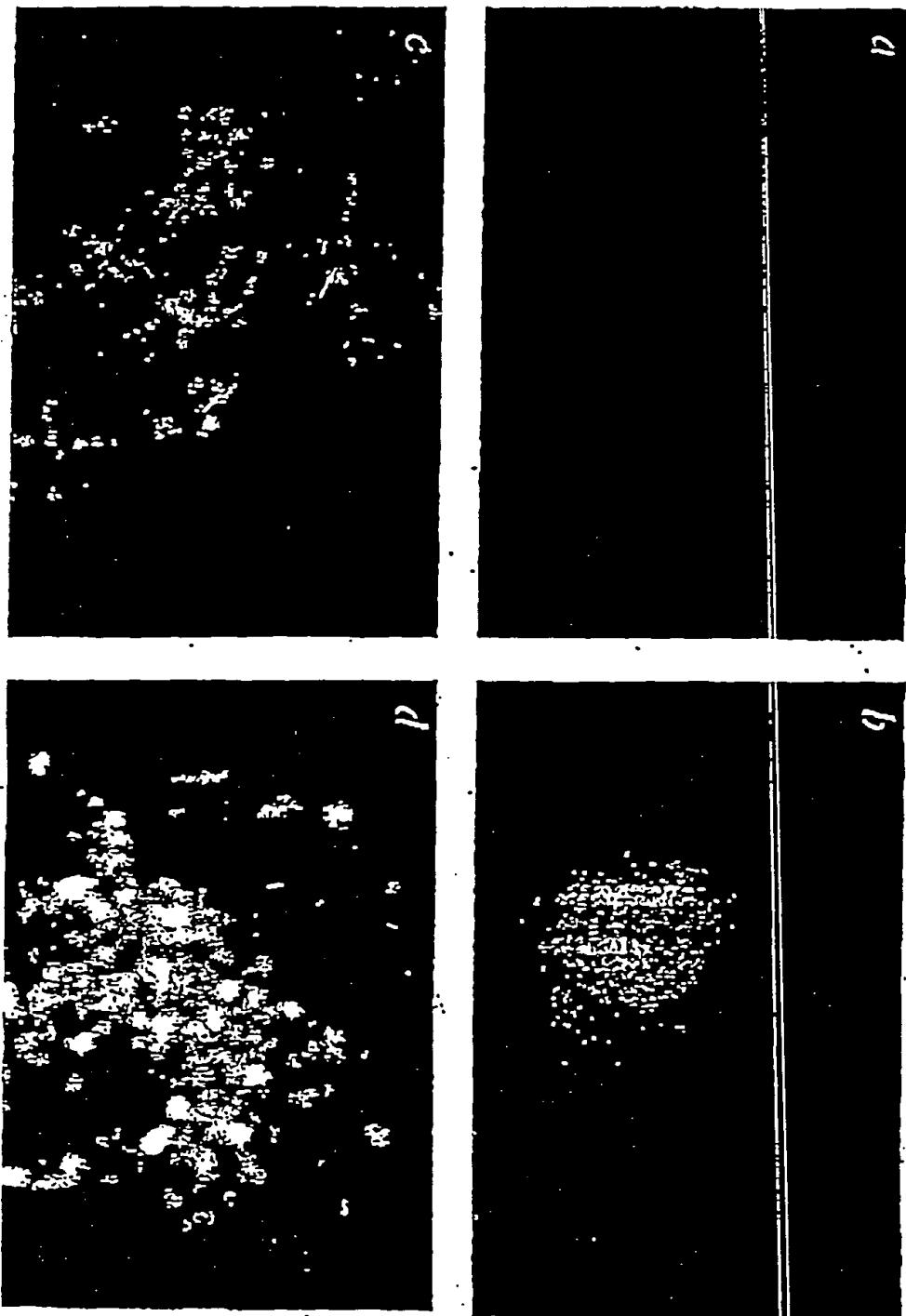


FIGURE 3

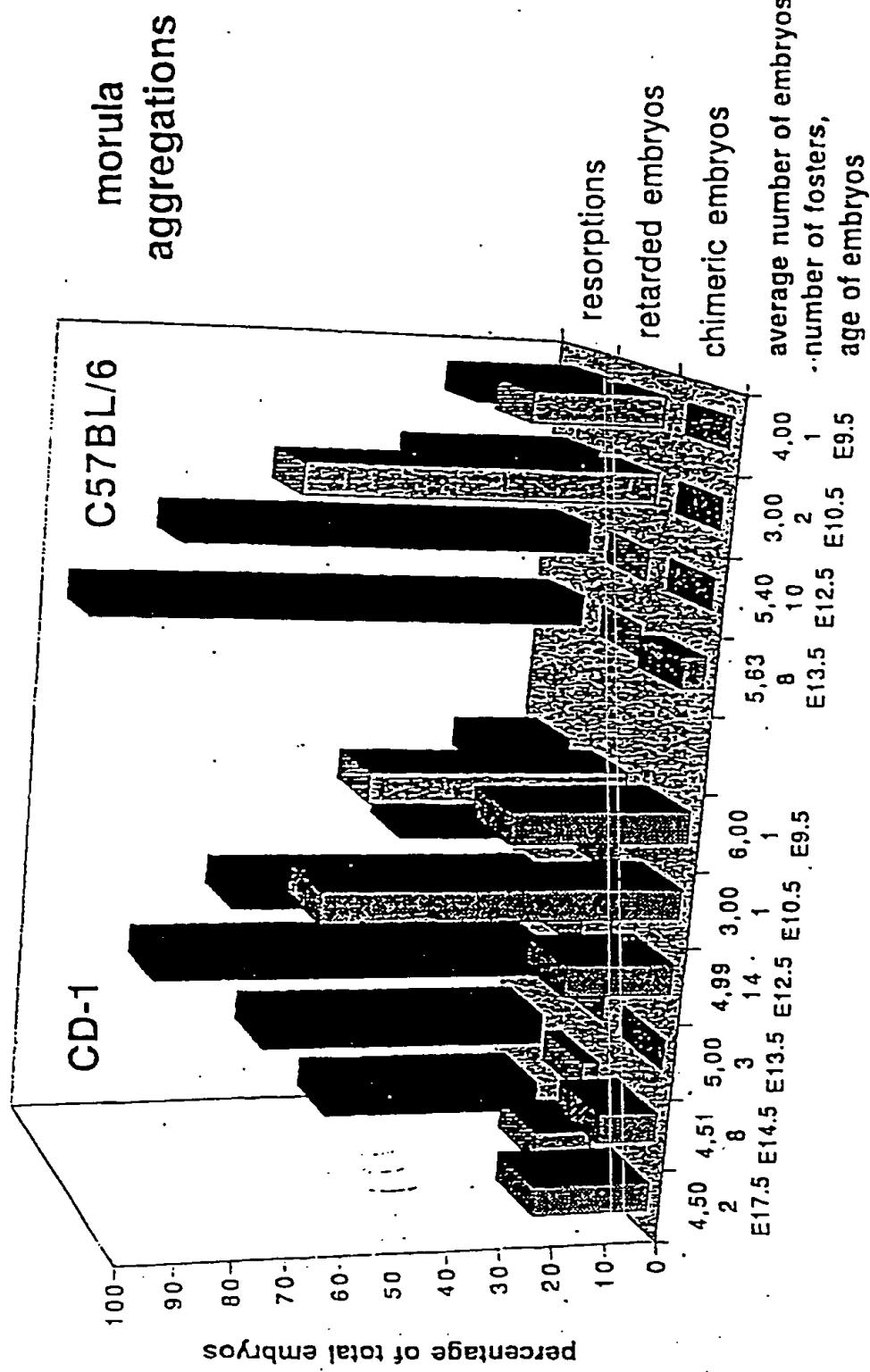


FIGURE 5

E17.5



E14.5



E12.5

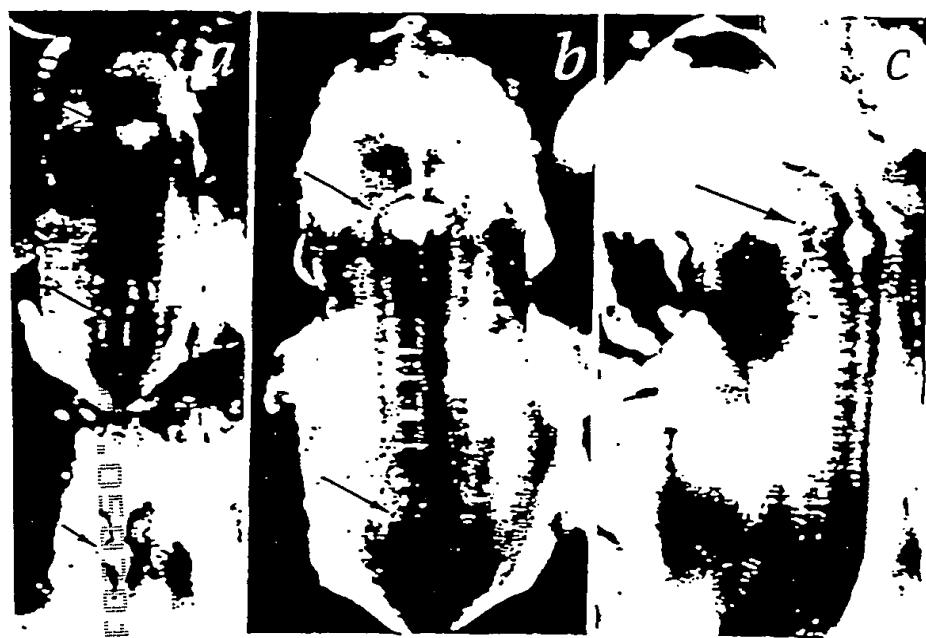


FIGURE 5

E10.5



E9.5

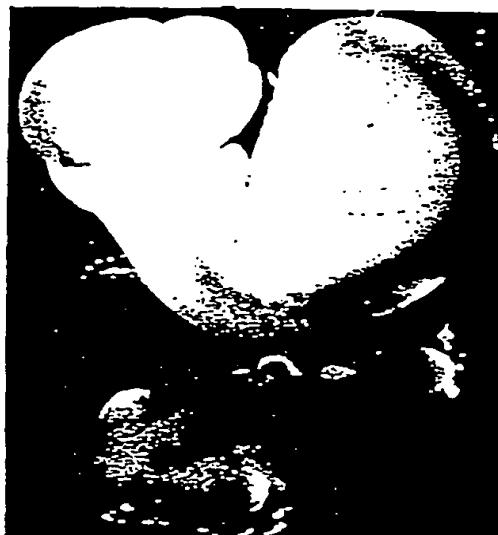




FIGURE 6

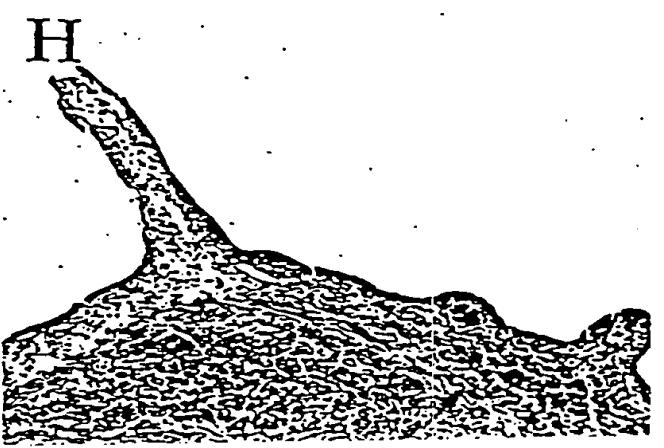
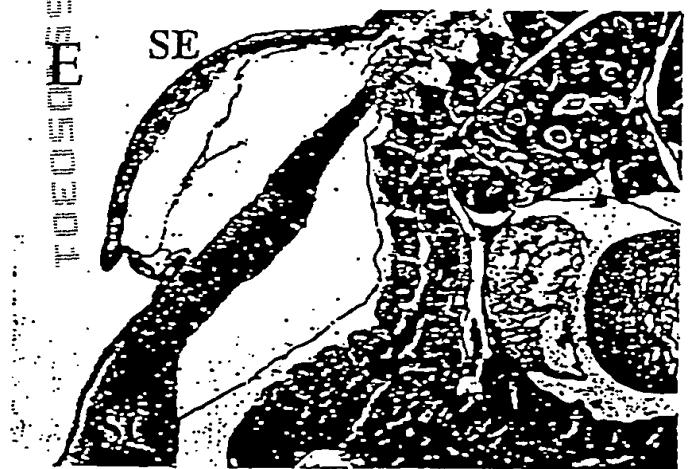
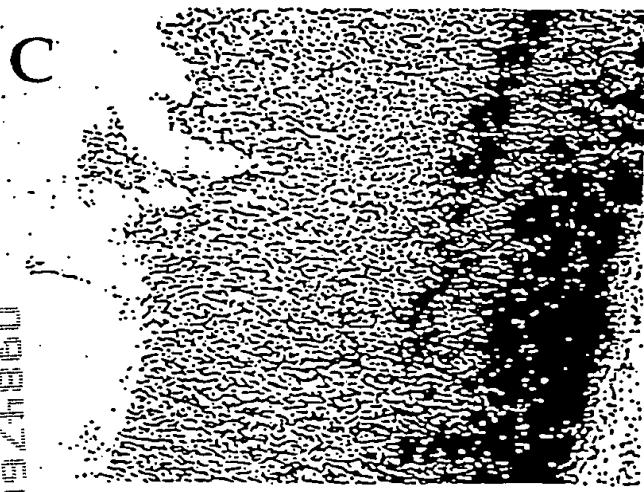


FIG. 7

### Sequence clone *Bpx* promoter murin SpeI-SalI fragment

ACTAGTCATAGCTGGCTTTACAAAAGGCTCAACACCCCTCCCC  
CACACTTAGTCATCCGTATCTCTTCCATCAGGAAATTATGAGAA  
TTTCCCATTAAAATCACACAGGTTGTGAAAATTACAGAAACCAGGGTA  
CAGAATATTAAACCACGTACATCATCCAAAGGCCACCTATGCT  
TATTTTGGTAATTAAACCTCAAAGGATCTCTTGTGGGCTCCTCCACT  
ACCCCTCTCTTCCCAGAGCCTCAGGTATAACCAAAGGGATAGACTA  
AAGACAATCCAGTACCTGCCATTTCATTCCGTACTGTTCCA  
TATAGCTCTTGAAATTATGAACATATAGTATCAGTTGAAAACGGAATG  
AATGATACTGCATTCTGCAAAATTCCACAGGCTATAGGGTGGAAAGATG  
AGCCATAGGTGGAGGAATGCCATTAGAGAATCTGGGAAGGCAAG  
AGGTGTTGAAATTTGATTCTACTAATTACTGGCTCAGGATTGTC  
AATCACTGCAGCCTGGCAAATGAGATTAGAGAAGAGTCCTGGGAGGG  
AGGGGTGACGCAGCAACCTGCATACACTTAAAAAAAGAGCTGAGAG  
ACAACCTGCGTAATCATACTGCGGCACCAGTCCATCCCTCCGCCCC  
GAGTGGCTGGAGCAGCTGCTGGAGGTCTGCCACTGCGGCTCTG  
CAGTCTCTAGCCTGTCCTCAGGGCTAGAGTCTCCGCCAGACAGCCG  
GTTCAATTCTGCTATCCCAGCTCAGCACCGTCTTTTATACTGCTGCTG  
CTGCCATCAGTCAGCCGCCCTCTGGTCACTCTGCCAGATC  
ATCGCGCATCTGCTTATTGGTGAGTCTCCTGCGGAGGTCAAGGCTCCT  
GATCTGCGGGCTTAGCCACCATAAGTGCAGGCGATCGTTGAAAACAAT  
GGCTGAATCAGTCGACCTCGAGGGGGGGCGTACCTGCCATTTC  
TCCCTGTCACTGTTCCATATAGCTTTGAAATTATGAACATATAGTA  
TCAGTTGAAAACGGAATGAATGATACTGCATTCTGCAAATTCCACAG  
GCTATAGGGTGGAAAGATGAGCCATAGGTGGAGGAATGCCATTAGA  
GAATCTGGGAAGGCAAGAGGGTTGAAATTGATTCTACTAATT  
CTGGCTCAGGATTGTCATCACTGCAGCCTGGCAAATGAGATTAGAGA  
AGAGTCCTGGGAGGGAAGGGGTGACGCAGCAACCTGCATACACTAAA  
AAAAAAAGAGCTGAGAGACAACCTGCGTAATCATACTGCGGCACCAGTCC  
TCCATCCCTCCGCCCGAGTGGCTGGAGCAGCTGCTGCGGAGGTCTG  
CCCACTGCGGCTCTGCAGTCTCTAGCCTGTCCTCAGGGCTAGAGT  
CTCCGCCAGACAGCCGGTTCAATTCTGCTATCCAGCTCAGCACCGT  
CTTTTATCCCCACTGCTGCTGCCATCAGTGCAGCCGCCGCGCT  
CTTGGTTCATCTGCCAGATCATCGCGATCTGCTGTATTGGTGAGTCT  
TCCTGCGGAGGTCAAGGTCTCTGATCTGCGGGCTAGCCACCATAAGTG  
CAGGCGATCGTTGAAAACAATGGCTGAATCAGTCGAC

[SEQ ID NO:1]

FIG. 8

Sequence Bpx murin cDNA identical to genomic DNA

GTACCTGCCATTTCATTCCCTGTCACTGTTCCATATAAGCTCTTT  
GAAATTATGAACATATAGTATCAGTTGAAAACCGGAATGAATGATACTGC  
ATTTCTGCAAATTCACAGGCTATAGGGTGGAAAGATGAGCCATAGGTG  
GAGGAATCAGCCATATTAGAGAACTGGGAAGGCAAGAGGTGTTGAAAT  
TTGATTCATCTACTAATTACTGGCTCAGGATTGTCAATCACTGCAGC  
CTGGCAAATGAGATTAGAGAAGAGTCCTGGGAGGGAAAGGGTGACGCA  
GCAACCTGCATACACTTAAAAAAAGAGCTGAGAGACAACTGCGTAAT  
CATACTGCGGCACCAGTTCCATCCCTCCGCCCCCGAGTGGCTGGAG  
CAGCTGCTTGGGAGGTCTGCCACTGCGGCTCTGCAGTCTAGCCT  
GTTCCCTCAGGGCCTAGAGTCTCCGCCAGACAGCCGGTTCAATTCTGC  
TATCCCAGCTCAGCACCGTCTTATCCCCACTGCTGCTGCCATGCCATC  
AGTGCAGCCGCCGCGCTCTGGTTCATCTGCCAGATCATCGCGCAT  
CTGCTGTATTGGTGAGTCTCCTGCGGAGGTCAAGTCTCCTGATCTGCGG  
GCTTAGCCACCATAAAGTGCAGGCATCGTTGAAAACAATGGCTGAATC  
AGTCGACCATAAAGAACATGTCGAATCCAACCAAGAAGAGCTGGCAGC  
CAGGTAAATGGCGGAGGGCCGGAAAGTCAGGACCGCAGTGAAGGT  
GTCTCCATTGAGCCTGGAGATGGCGGGCAACATGGTGAAGAAACCGTGG  
CTGCTGGAGTAGGGAAAGAGGGAAAAGGTGAAGAAGCTGCTGCAGGGT  
CTGGGGAAAGATGCTGGAAAGTGCAGGACTGATGAGGACTCAGACT  
CAGACCGTCCAAAAGGACTTATCGGTATCTTATAGATACCGATTCGTT  
GAAAGTCTCCAGTGAAGTTAAGTGCCTAGTCTTAAAGC  
TTCAAACAAGAGCTGCCATTGGAATCCTGAGGGATTCTAT  
GACATTGAAAGGAAGTTGCTGAAATGTACCAACCTTACTAGAAAAAA  
GACGACAGATCATCAATGCAGTCTATGAGCCCACAGAAGAGGAATGTGA  
GTATAATCGGACTGTGAGGACTATTGAGGAGGAGATGGATGAGGAG  
GAAGAGACTAACGGCAACGAAGACGGTATGGTGCATGAATACGTGGAT  
GAAGATGATGGTTATGAGGACTGTTATTATGATGACGAGGAAG  
AAGAGGAGGAGGAAGATGACAGCGCTGGGCCACCGGAGGAGAAGAG  
GTTAACGAAGAGGATCCTAACGGGATTCCGGATTTGGTGAATGTTT  
AAAAAAAGTGAAGCACTCACTCCTATGATTAAGAAATATGATGAGCCT  
ATTCTGAAGCTGCTGACAGATATTAAAGTGAAGCTTCCGATCCGGGG  
AGCCTCTCAGCTCACACTCGAATTCAAGCCCAATGAATATT  
AAAAATGAGCTGTTGACAAAGACTTATGTGCTGAAGTCAAAGCTTGCAT  
GCTACGATCCCCACCCCTTATAGGGGAACGCCATTGAGTACGCCACTGG  
CTGCGACATAGATTGGAACGAAGGGAAAGAATGTCACTTGAGAACCATC  
AAGAAGAAGCAGAGACATCGCGTCTGGGGAACTGTCCGAACGTGACTG  
AAGATTCTCCAAGGACTCTTCTCAATTCTCTCTCATGGGATCA  
GCTTAAATGGAGGGATGAAATGATGATTACTGGTCATAATCTG

FIG. 8 cont.

CGTACTTACATAATTCCAAGATCAGTGTATTTCTCAGGAGATGCACT  
TGAATCTCAGCAGGAGGGTAGTGTAGGGAAAGTTAATGACGAAATATA  
GACAAAATTATTATGATGATTGGATGGCTGCAATTGAAGAGGTTAAAG  
CCTGTTGCAAAAATCTTGAGGCATTAGTAGAAGATATTGATCGTTAAAC  
AGAGTAGATGCTTTGAAACTAACTGCTCTACATGCAGTTACTGAAGACA  
TAAGCAGTTAATATTGCTTGTGTTCTGCATTTCCTGTCATGCCAGTT  
AAAAAATTCAAATACTAATTAATCTGACCTTGCAATTGTAGTGGTATGATG  
TTTCAAGACATGTAGACTGTGATAAAATGATTAAGACATTAATAGTCGT  
AGTATAACCCTCTGAAGTCCTGTGCCATGTATCTATTAAATCTGTGGCT  
GTGAATATTATTAGAAGTGCTAAATGAGATTATTGTTGCAAAAGAAAAT  
ATTGGAAACCTACCTAAGAGTGCTTGCTATTTCCTTATCCTCTTAG  
TGCTTGCCAATTGACTTATTGTCCTGCTCATTTGCAGTAAATATG  
CAGTAGAATTAAAACCTGAATGCCTAACAGAGGCCTGCATATGATTGAGA  
ATTTCAGGCAAAATCATATTATTGATAACAGCTAGTGCAAGGCCTC  
TGATTGTATGTGACTGTGATAAAATAATAAAACTCAATTGTATTGAAGTTA  
CTGTTTATCATTGACATGTGAGTTACAGTATTCAAAATGTTGCAAATATT  
GTCCIGTGTAAATTGTGAAACTGTGATTACAGTGTACATTTCATAAT  
ATACTGAATCATTCAATTGAAATGGACACTTACCATTTCTGAAAATACAT  
TTCATATTCTGTTCACTGAAAAATAAAATGAATAAAAATT

[SEQ ID NO:2]

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FIG. 9

**BPX human cDNA identical to genomic DNA**

TGTTAGAGAGCCTGGGAAGGTGAGcAGAGcTGAAAACITGATAGATCTA  
ATAATTTACTGGCTCTGGGTTGTCACTACATTGCAGCAAATGAGA  
TTAGAGCATAGTTGTGGGAGGGAAGGAGGTGACGCAGCAATCTATITGC  
ACCTAGAAAATTAGGCAAGTGATAGCTGCGTAATCATACTGCGGCACC  
GTTTTTTCTTGCAGCAGTAGCTGCTTGCAGGAGGTCTGCCCACTGCA  
GCTCTCTGCAGTCTCCGGCTCTCCTGCAAGGATCGGTCAACGCAGCCGT  
CGCCGCCCTCTGCACCCAGCCAGGTGCCACTGCTTCAGTCCGGTTCTC  
AAAGCCTCAGCACCATCTTATCCCCGAGCAGCCTGGATCGTCGTTCCC  
TCAGTCCGGACGCCACTGCTAGGTCCGACCACGCCCTCTGATATTTC  
GGTGAGTCTTTCTGTGGAGGTTGGTCTCCGATCTGTGGTAGCCA  
CCTTAGGCGTGTACGGCCTTGAAAAATGGCCGAGTCAGAGAACCGCA  
AGGAGCTGTCAGAATCCAGTCAAGAACAGGCTGGTAATCAGATAATGGT  
GGAAGGGCTCGGGAACATCTGGAGCGCGGTGAAGATGCCGCTGCTGG  
GCTTGGAGACGATGGGAAGTGCAGGTGAAGAACGCTGCCGCTGGCTGG  
GGAAGAACGGGAAAACGGTGAAGATACTGCTGCTGGTCCGGGGAAAGA  
GGGAAAAAAAGGTGGCGATACTGATGAGGACTCAGAGGCAGACCGTCC  
AAAAGGACTTATC  
GGTTATGTTAGATAACAGACTTGTGAAAGTCTACCTGTGAAAGTTAA  
GTACCGTGTGTAGCCCTAAAAAGCTCAAACACTAGAGCGGCCAATTAA  
GAATCCAAATTCTGAGGGAAATTGACATTGAAAGAAAGTTGCTG  
AAATGTACCAACCCCTACTGGAAAAAAAGACGTCAGATCATCAATGCAAT  
CTATGAACCTACAGAACAGGAATGTGAATATAATCAGACTCTGAGGAC  
TGTGATGATGAGGAAATGTGTCATGAAGAGATGTATGGTAATGAGGAGG  
GTATGGTACATGAATATGTGGATGAGGACGATGGTATGAGGACTTATA  
TTATGATTATGCTGTGGAAAGAGGAGGAGGAGGAGGAGGAGGACGA  
CATTGAGGCTACTGGAGAACAGAACATAAGAACAGAGGAGGATCCTAAGGG  
AATTCTGATTTGGCTAACTGTTAAAAAACGTTGATAACACTCACTC  
CTTGATTAAGAAATATGATGAGCCTATTCTGAAGCTCCTGACAGATATT  
AAAGTTAAGCTTCAGATCC

**FIG. 9 cont.**

TGGCGAGCCCTCAGTTCACACTAGAATTCACTTCAAACCCAATGAAT  
ATTCAAAAATGAGTTGACAAAGACCTATGTGCTGAAGTCAGCTA  
GCATATTATGATCCCCATCCCTATAAGGGAACTGCGATTGAGTATTCCAC  
AGGCTGTGAGATAGATTGGAATGAAGGAAAGAATGTCACITGAAAACC  
ATCAAGAAGAAACAGAAACATCGGATCTGGGAACAATCCGAACGTAA  
CTGAAGATTTCCAAGGATTCAATTTCATTTCCTCTCCTCATGGAA  
TCACCTCAAATGGAAGGGATGGAAATGATGATTTCCTGGTACAAAT  
TACGTACTTACATAATTCCAAGATCAGTATTTCAGGTGATGCA  
CTGGAATCTCAGCAGGAGGGTAGTTAGAGAAGTTAATGATGCAATT  
ATGACAAAATTATTATGATAATTGGATGGCTGCAATTGAGGAAGTTAAA  
GCTTGTGCAAAACCTGAGGCATTAGTAGAAGACATTGATGTTAGA  
GCAGAGTATACTGGCCCTGAAATTAACTgCCCTAGATATAGTTACTCAA  
GGTATAAGAAgCCTTGTGTTCTGTATTTCCTTGTAGTGTAGTTAAAC  
ATATGTTCAAAATATAAGAAAAGTTCAAAACTAATTAAATTGACCTT  
GAGTTTAGTAGTAGAATGTTCAAGAAATGTACACTGTGGTAAATGAT  
TAAACACTAGTATAGTGTGTTAGCTTAATCCTCTGAAGTCCTTGT  
TCATGTAGCTATTAAATCTGTGGCTATGAAATGATCAGAAATGCTAAGTGA  
GATCAATATTGTTGGAAAAAAATCTGGAAACAACCCAAGGGTTT  
CGCTGTGTTCTTCTTCTATTGTTACTTAGTCCTTAGCTAG  
TGGATTAAATTGTTGTGCTGCTCATTTGCAATAACAATGCAGTAG  
AATTAAAACITGGATGCTTAAGAGGCCIGCATATAGATAAGAATTCA  
GCAAAACTACATTATTGTTAATAACAGCTTGTCTAGGCTCTGTATT  
TATGTAACGTGATAAAATAATGAAAACCTAGTTATTGAGGTATTGTT  
TGTGGTGAAGTGTAGTCACAGTATTTCAAAAGTTGCACATATTGTT  
CTGTGTAATTGTGTAAGCCATAATTACAGTGTIAATTCTCTTCTATT  
ACATCATTGAAAGTGATCACTTACCATTTGAAAAGATATTGTT  
GTTCTTCACTGCAAAATAAAAAGAATAAAAATTTCAGAGTGTCTCATGG  
AATTCC

[SEQ ID NO:3]

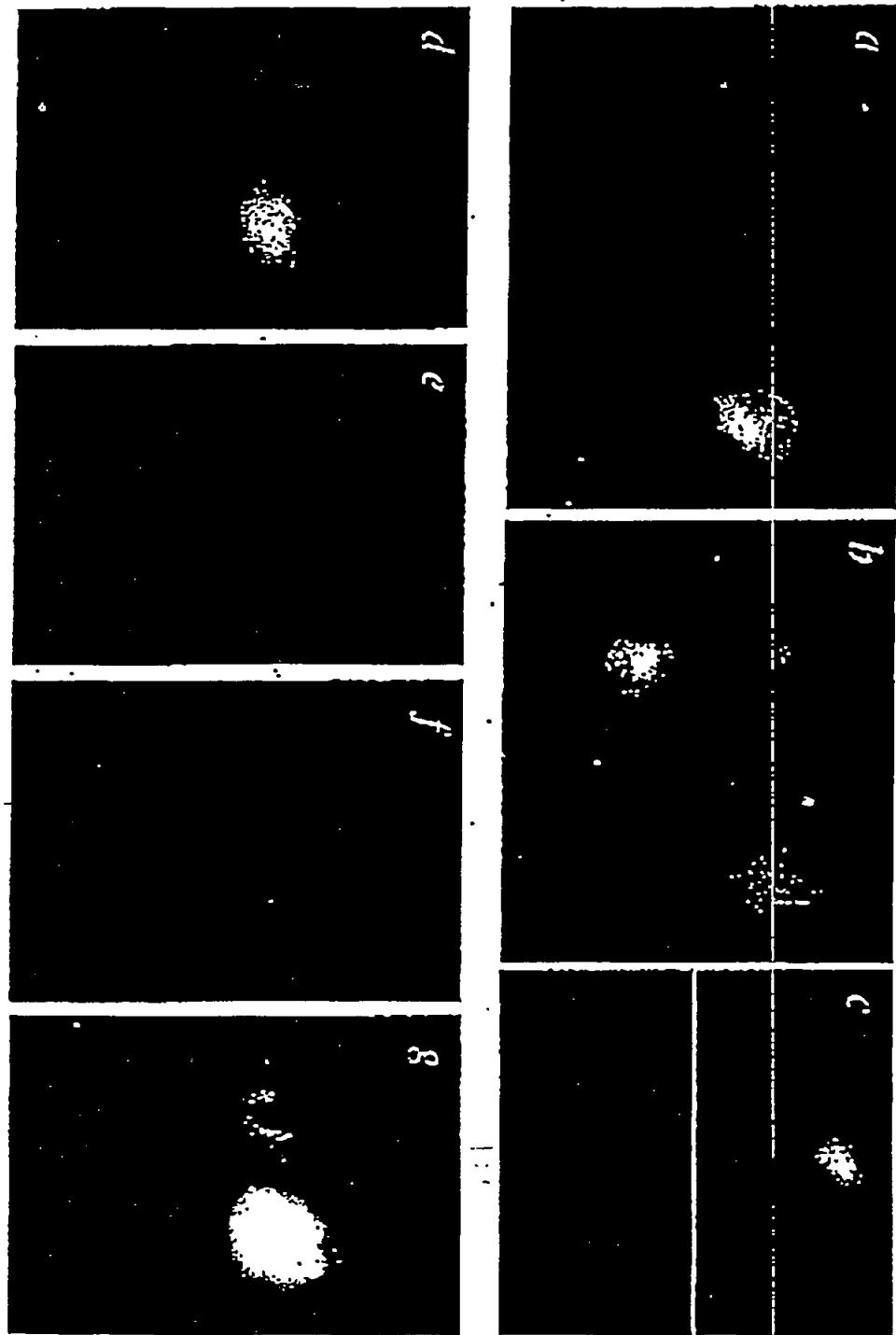
FIG. 10

human *BPX 5'* region

ACTTAAAGGAAAAATTATCTATAAAGTACAGAGAATTAGAAATAAATA  
CAACAATATGTAAACAGTTTAATATCTGTGATAGTAACAAATTCTTAA  
ATCTGGAAAATAATAGTCACTAAAATTAAAAATTGTCAATTAAATA  
AATGATCCAAGTTAGAAATATGAACAAAATAAACCTCACCAATAATTAC  
TATAGAGAGGAAATTAAATTACTGCAAAGCTTCCATCCTATAAATACA  
TTATCAAATAGTTAACCATTTCTTAATGCTGAGATTAGATTATTCCA  
ATTAACCTAAAAGCATCAAGCAAATGTTATGATTCTAAGAATAAACATA  
ACTTTCCATTGGCTTGTATATATGTATATTCTAACGGCTGTTAAAG  
CCAGCATTAGAAGGAGAAGCAGAAAGTCAGTATTGGGACTGGGGTTAT  
TTATAAGCCAGGCAACTGGTTAATTGTGGTTAATTGTCGGTATGTTAC  
TAGTCACGTAGTTGTATACACCATACTAGTTTCTCACAGGCCCTCAT  
TCGCCCCACTGCCATCGGACTTCCCTCCCTCCCTCACAGGAAATGTT  
TCGAGAATTTCACCTAAAATCATATAGCTTGTAAAAATACCGACAA  
ACATAATATAGAATATTAAATAACTGACACGCCACCTAAAGACCATCA  
GTGCTAATTCTGGTGTATTAAATCTTGAAGCGTTATCAGCTCTT  
CCACCATCCACCTCTCCCCCCCCAGGTCCCCGATCTAAAATCAAAGAG  
ATTGATTAGGATGGGTGGTGCCTGTCTCTCATGTTGACATT  
AGTTACGTTTCTCTGAGCTCTGGAAAGCATAAAAGTATAATATCTGT  
AAAAAGTTGGATGAATGAACATAATGAACGCAATGGGATTCCAGAAA  
CTGGGGAGATGGGCTAGAGGACGAGGAGGAGGTGGATGAATCAGCCA  
TGTTAGAGAGCCTGGGAAGGTGAGCAGAGTTGAAAACCTGATAG  
ATCTAATAATTACTGGCTCTGGGTITGTCACTACATTGCAGCAAA  
TGAGATTAGAGCATAGTTGTGGGAGGGAAAGGAGGTGACGCAGCAATCTA  
TTGTCACCTAGAAATTAGGCAAGTGTAGCTCGTAATCATACTGCGG  
CACCGTTTTCTTGCAAGCAGTAGCTGCTTGCGGAGGAGGTCTGCCAC  
TGCAGCTCTGCAGTCTCCGGCTCTCCCTGCAGGATCGGTCAACGCAG  
CCGTCGCCGCCCTCTGCACCCAGGCCAGGTGCCACTGCTTCAGTCGGT  
TCTCAAAGCCTCAGCACCATTCTTATCCCCGAGCAGCCTGGATCGTCGT  
TCCCTCAGTCCGGACGCCACTGCTAGGTCCGACCACGCCGCTCTGATA  
TTCCGGTGAGTCCTTCTGTGGAGGTGGTCTCCGATCTCTGTGGTA  
GCCACCTAGGCGTGTACGGTCTTGAAGAA

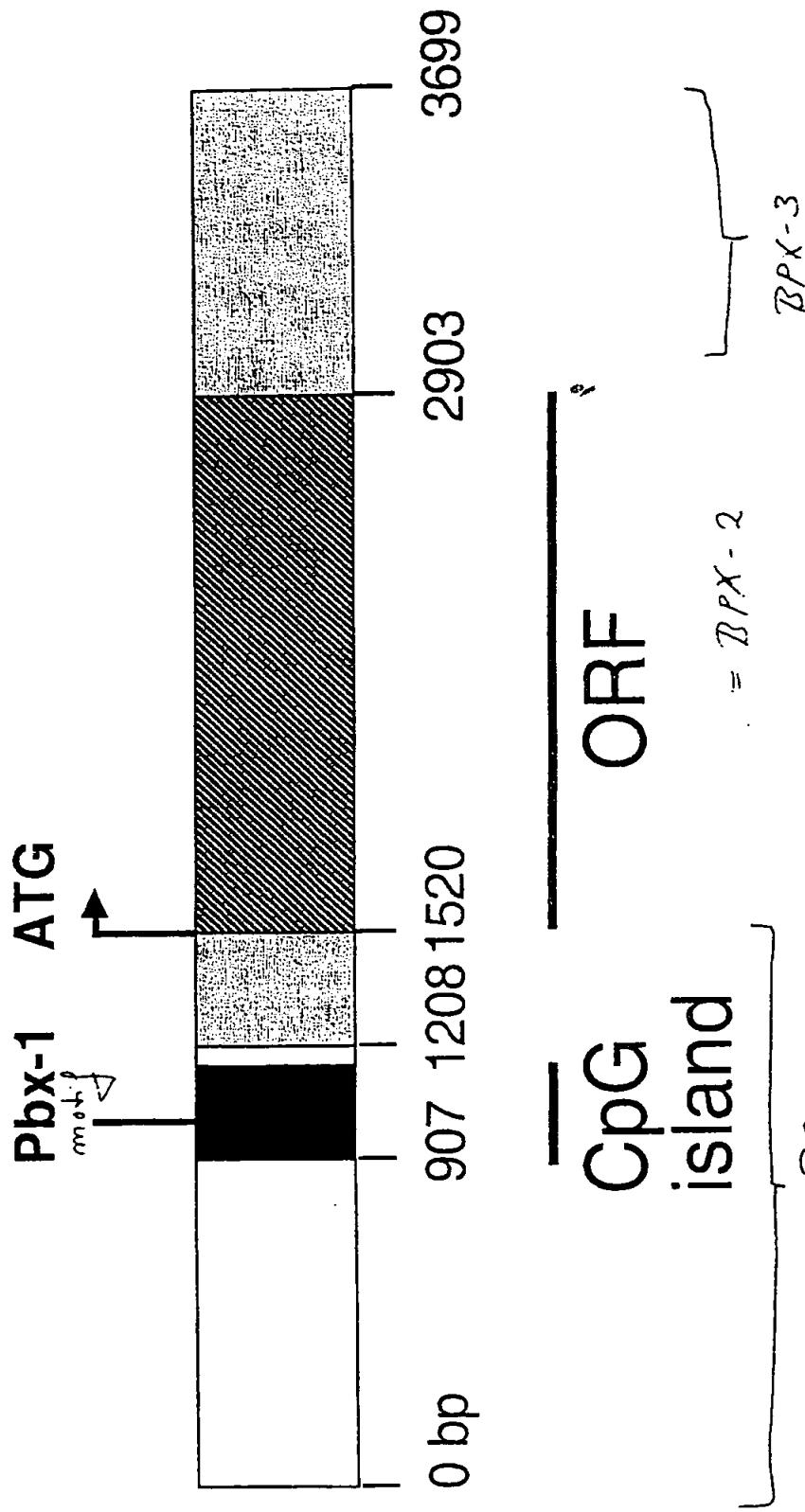
[SEQ ID NO:4]

064747955 - 06090202



## FIGURE 11

# Genomic structure of the *NAP1L2* gene



0 - 1519 = *BPX-1*  
Promoter + 5' untranscribed  
(1208 → 1519)

FIGURE 12